NTE8E Engineer's Installation Guide

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The ISDN2e Network Terminating Equipment NTE8E is manufactured by ELCON

Introduction

- The NTE8 is the customer termination for the BT ISDN2e service and this document is a guide to the installation procedure.
- This unit is a direct replacement for the NTE8A, B, C and D. It must not be used as a replacement for an NTE6.
- This NTE has the addition of a copper by-pass feature that enables a no-customer visit to change service to PSTN or Broadband and will take the place of an NTE5.
- This unit can also be used on low voltage ISDN lines.

Unit Description

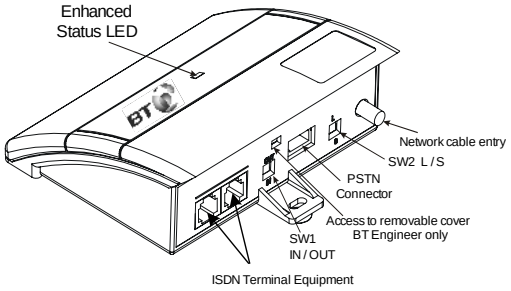

Figure 1

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Installation

1. Wall mounting

The NTE8 can be mounted in most domestic and office environments, avoiding direct sunlight, sources of heat, sources of electromagnetic radiation, and areas which are subject to high humidity such as kitchens and laundry rooms etc.
The NTE must be mounted with the customer sockets facing down.
Use the template provided with this guide to mark the two fixing screw positions. Please note that a minimum of 190mm clearance is required (marked by dashed lines) to enable the customer to insert and remove the extension cabling or terminal equipment plugs into the RJ45 sockets and to enable the installation engineer to open and remove the cover.
CAUTION: Before drilling holes, make sure that there are no concealed installations (e.g. power, water, gas).
Drill (∅ 6 mm) and plug the wall for the two cross-head screws provided. For a hollow wall, suitable proprietary fixing should be used. If fitting to wood, drill suitable pilot holes.
Position the screw that will mate with the keyhole fixing, leaving approx 2mm protruding (see fig. 2a) to allow a snug fit in the slot and the NTE lies flat against the mounting surface without any case distortion.
Hang the NTE over the screw head and pull it down until it locks in place safely (see fig. 2b).
Then insert the second screw in the lower hole.
Ensure that the case fixings are sound and that there is no movement, but do not over-tighten the securing screws.

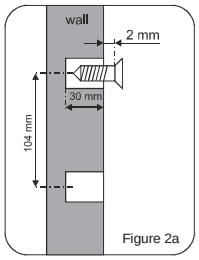


Figure 2a

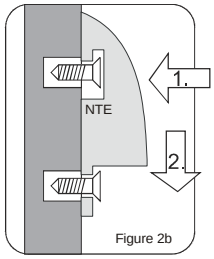


Figure 2b

ATTENTION! – Default Configuration

Check the IN/OUT and L/S switches are both in the default position of "IN" and "S" unless providing Customer Extension Wiring.

ATTENTION! Dangerous Voltage!

The ISDN connection is a voltage source that should be inaccessible to the user. The NTE cover shall only be opened by BT ISDN trained engineers. Do not touch the PCB unless you are wearing an anti-static strap. The strap is not required for normal line installation. Do not install the NTE or work on the line during thunderstorms.

2. Connecting the NTE8 to the Network

Remove the BT Engineer-only-removable cover to gain access to the network wiring connectors. This cover is attached to the lower part of the NTE with a clip. To loosen the locking mechanism use a No.1 screwdriver and push it slightly into the rectangular slot above the switch marked "OUT" (see Unit Description). Strip approximately 100mm of sheath from the network cable, feed the cable into the NTE and route the cable through the chicane. (see fig. 3). Terminate the cable on the IDC, wiring polarity is unimportant. Replace the network access cover.

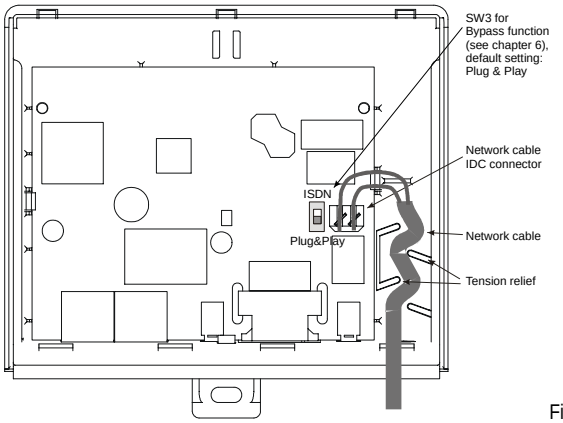


Figure 3

Write the customer directory and fault reporting number on the customer service label.

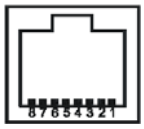
3. Lightning Protection

Lightning protection shall be provided as for standard PSTN lines. Where the service is provided via aerial cable either over more than three spans, or in areas with a high risk of electric storms, the circuit may require additional protection. Please refer to the Lightning Protection Handbook ISIS/EPT/PPS/B055.

4. Customer S-Bus Extension Wiring (Chargeable Option)

Cable to category 5 specification should be used to complete the installation. Please refer to the table below for RJ45 wiring and Figure 5 for sample wiring configurations / switch settings. All extension wiring MUST have a Type 2 socket (which incorporates terminating resistors), as the last socket.
Further wiring details can be found in BS EN 50098-1.

Pin	Wire colour	TE	NT
1	White/orange	P Source 3	P Sink 3
2	Orange/white	P Source 3	P Sink 3
3	White/green	Transmit	Receive
4	Blue/white	Receive	Transmit
5	White/blue	Receive	Transmit
6	Green/white	Transmit	Receive
7	White/brown	P Sink 2	P Source 2
8	Brown/white	P Sink 2	P Source 2



5. Testing and fault locating

A green LED in the centre indicates the status of the NTE.

LED Indicator	
OFF	No Service or device in bypass mode
ON (dim)	Exchange line Voltage > 30V but line side deactivated, no layer 1
Flashing quickly (8 Hz)	Network connection activating
Flashing slowly (1 Hz)	Normal Service (layer 1) with No Customer Terminal Equipment (CPE) connected or detected. Network connection active but customer side S-Bus deactivated (or activating).
ON (bright)	Normal Service (layer 1) with CPE connected and detected.

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Note: Cut off paper below this line!

If the LED is ON (bright) then voice and data testing should be completed by using an ISDN Basic Access Tester, Digital CPE Simulator, laptop or similar device. Use the tester to confirm “Power Source 1 restricted”. A brightly lit state will confirm layer 1 activated but not the presence of a TEI. On System X exchanges a double slow flash may be observed every 15 seconds, this is caused by the line card toggling between Info State 2 and 0. This is typical of all embedded System X lines when there is no CPE connected or CPE is detected but not in the correct Info State. The LED not lit or permanently fast flashing indicates a problem with the network connection. A permanently slowly flashing LED could indicate a problem with the customer wiring or CPE. BT Engineers Assistance Website - http://customerservice.intra.bt.com/eassistant/

6. NTE Bypass function for PSTN and Broadband mode (Extended Use)

The NTE will detect the line voltage from the exchange and switch automatically to the ISDN or PSTN mode. The NTE will provide PSTN service to the PSTN socket if a standard analogue line card is used and will act as an NTE5. When the ISDN service is jumpered/enabled in the Local Exchange, the NTE supports ISDN services and the PSTN socket is disconnected. The NTE will switch back to the analogue PSTN mode if the ISDN service is removed/de-configured. The NTE will switch out of copper bypass at 75 ±8 volts and switch back into copper by-pass when the voltage falls below 30 ±3 volts. An internal switch SW3 (position: see fig. 3) is provided so the installer can over ride the by-pass feature to allow operation on low voltage ISDN lines.

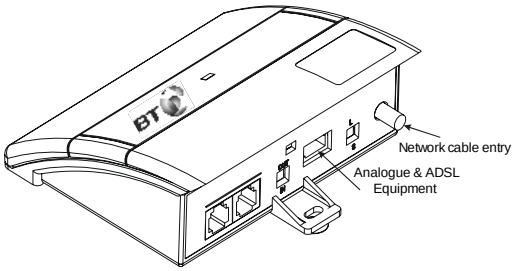

Figure 4

7. Example S-BUS Connections

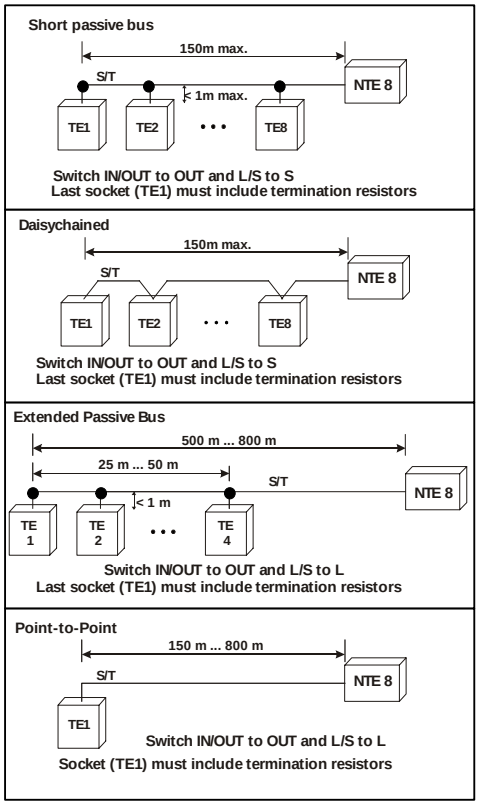

Figure 5

Functional Block Diagram

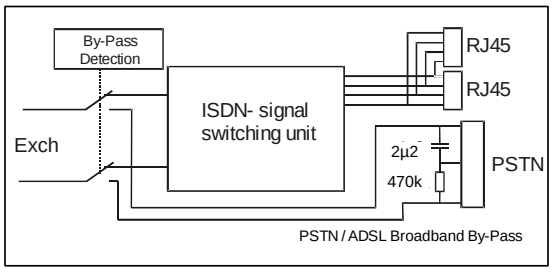

Figure 6

Technical Data

U interface	TS 102 080, Annex A
Channel structure	2B+D, synchronization and service data
Line code	2B1Q
Net data rate	144 kbps (2 x 64 kbps + 16 kbps)
Safety status	TNV3 (Telecommunication Network Voltage)
S/T interface	according to ETS 300 012
Channel structure	2B+D, synchronization and monitoring
Bus configuration:	S = Short passive bus
(default setting)	IN = 50Ω Terminating Resistors
Safety status	TNV1 (Telecommunication Network Voltage)
Power	ITU-T I.430
Wattage on S/T interface	≤ 420 mW in operation
Dimensions and environmental conditions	
Storage	ETS 300 019-1-1, Class 1.1 (-25°C to +55°C)
Transport	ETS 300 019-1-2, Class 2.3 (-25°C to +55°C)
Operation	ETS 300 019-1-3, Class 3.2 (-5°C to +55°C)
Case	123 x 130 x 50 mm
Weight	0.5 kg

Our products are subject to continuous further development and improvement.

Safety

CE	This equipment complies with the European directives 89/336/EEC “Electromagnetic Compatibility” (EMC) and 73/23/EEC “Low Voltage Directive”.
⚡	Do not work on the NTE and its wiring, e.g. connect or disconnect cables, during periods of lightning activity.
⚡	Hazardous Voltages ! Remote Power Feeding / ISDN connection (Line) The ISDN connection is regarded as a source of voltage that should be inaccessible to user contact. Do not attempt to tamper with or open the NT1 or the connection hardware. Maintenance must be made only by suitably trained engineers.
ESD	ESD Protection (for service personnel) When handling the unit with the cover opened, please use ESD protection methods acc. to EN 100 015. Not required for normal installation.

All customer ordered facilities must be tested prior to handover to customer.
This guide should be retained for future reference.

Returns

If the NTE is proved to be faulty on installation, please return it using the BT return procedure.

If you have any comments to make about this documentation, or the ISDN NTE please email: dave.j.allen@bt.com.

The information contained in this guide is correct at the time of going to press, but it is not comprehensive and shall not form any part of a contract. Some products and services may not be available in all areas. Whilst we do our best to supply customers with the products and services that they ask for, we reserve the right to supply products and services which do not accord exactly with the descriptions and illustrations in this guide.

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